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(12) United States Patent Kalt

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(54)	ELECTROSTATIC VIDEO DISPLAY DRIVE
	CIRCUITRY AND DISPLAYS
	INCORPORATING SAME

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- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35

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Related U.S. Application Data

- (63) Continuation of application No. 09/055,575, filed on Apr. 6, 1998, now Pat. No. 6,057,814, which is a continuation-in-part of application No. 08/871,486, filed on Jun. 9, 1997, now abandoned, which is a continuation-in-part of application No. 08/681,606, filed on Jul. 29, 1996, now Pat. No. 5,638,084, which is a continuation of application No. 08/228,111, filed on Apr. 15, 1994, now abandoned, which is a continuation-in-part of application No. 08/066,949, filed on May 24, 1993, now Pat. No. 5,519,565, which is a continuation-in-part of application No. 07/887,714, filed on May 22, 1992, now Pat. No. 5,231,559.
- (51) Int. Cl.⁷ G09G 3/00
- (52) **U.S. Cl.** **345/85**; 345/31; 359/230; 340/907; 340/905

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(57) ABSTRACT

Disclosed is a low-cost, programmable electronically actuated, continuous use traffic sign including a pixellated display matrix, the display matrix being electronically actuatable to display a desired traffic information image display suitable for roadside and other vehicular use where it may be clearly viewed by direct sunlight during the day and by illumination at night. A preferred display is electrostatically actuated for low power requirements and comprises pixels which have spiral rollout shutters. The display can be remotely programmed and controlled, via a modem, and may be solar or battery powered, powered by a local power network or from a combination of the foregoing. Low-cost film technology manufacturing methods are also described.

13 Claims, 8 Drawing Sheets

